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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,546	08/31/2001	James Grey	5150-50100	3042

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MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

EXAMINER

DUNCAN, MARC M

ART UNIT PAPER NUMBER

2113

DATE MAILED: 05/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,546

Applicant(s)

GREY, JAMES

Examiner

Marc M Duncan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2, 3.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

Claims 11-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-8, 11-16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meth et al. in view of Hansen.

Claims 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Meth and Hansen as applied to claims 1 and 11 above, and further in view of Shirakihara et al.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meth and Hansen as applied to claim 1 above, and further in view of Stiffler.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. A memory medium comprising program instructions does not represent statutory subject matter. The program instructions must be executed by a computer and the memory medium must be computer readable. The use of "a computer program product" is an example of acceptable claim language under 35 USC 101. Appropriate correction is required.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-8, 11-16 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meth et al. in view of Hansen.

Regarding claim 1:

Meth teaches executing a program on a computer system in the entire document.

Meth teaches performing one or more snapshots of the execution of the program, wherein each snapshot is performed at a particular point during execution of the program in col. 1 lines 52-55.

Meth teaches wherein, for each snapshot, performing the snapshot comprises storing information usable to re-start execution of the program from the point at which the snapshot was performed in col. 1 lines 55-57.

Meth does not explicitly teach the process being a test executive sequence.

Meth does, however, teach a program executing on a computer.

Hansen teaches the program being a test executive sequence in the entire document.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the test executive sequence of Hansen with the method of checkpointing a program of Meth.

One of ordinary skill in the art at the time of invention would have been motivated to combine the teachings because Meth teaches checkpointing a computer program. Meth teaches that checkpointing allows the computer program to be restarted from a checkpoint, rather than from the beginning, in the case of a failure during execution. Hansen teaches a specific type of computer program that could be utilized with the checkpoint method of Meth to provide a reliable, failure-tolerant test executive sequence.

Regarding claim 2:

Meth teaches stopping execution of the test executive sequence after a particular snapshot is performed in col. 1 lines 55-57.

Meth teaches re-starting execution of the test executive sequence from the point at which the particular snapshot was performed in col. 1 lines 55-57.

Meth teaches wherein said re-starting execution of the test executive sequence comprises using the stored information of the snapshot to restore an execution environment of the computer system so that the test executive sequence can execute correctly from the point at which the particular snapshot was performed in the Abstract lines 7-8 and lines 14-16.

Regarding claim 3:

Meth teaches wherein said restoring the execution environment of the computer system comprises using the stored information of the snapshot to re-create a stack frame of the computer system in col. 3 lines 3-5 and col. 4 lines 41-46.

Regarding claim 4:

Meth teaches wherein said re-creating the stack frame comprises placing data on the stack frame so that the stack frame is in a state as if execution of the test executive sequence had run to the point at which the particular snapshot was performed in col. 3 lines 3-5 and col. 4 lines 41-46.

Regarding claim 5:

Meth teaches wherein said restoring the execution environment of the computer system comprises making the execution environment of the computer system substantially the same as when the particular snapshot was performed in col. 4 lines 34-55.

Regarding claim 6:

Meth teaches wherein said storing the information comprises persistently storing the information in Fig. 12, col. 12 lines 26-27 and col. 13 lines 4-6.

Regarding claim 7:

Meth teaches wherein said storing information comprises storing one or more of: a variable value; a property value in col. 6 lines 32-35.

Regarding claim 8:

Hansen teaches wherein the test executive sequence comprises a plurality of steps in the entire document.

Meth teaches wherein the points at which the snapshots are performed correspond to steps in the test executive sequence in col. 1 lines 52-55. The teaching of capturing intermediate results of Meth is equivalent to snapshots corresponding to execution steps.

Regarding claim 11:

Claim 11 is rejected as the computer program product storing program instructions for performing the method of claim 1.

Regarding claim 12:

Claim 12 is rejected as the computer program product storing program instructions for performing the method of claim 2.

Regarding claim 13:

Claim 13 is rejected as the computer program product storing program instructions for performing the method of claim 3.

Regarding claim 14:

Claim 14 is rejected as the computer program product storing program instructions for performing the method of claim 6.

Regarding claim 15:

Claim 15 is rejected as the computer program product storing program instructions for performing the method of claim 7.

Regarding claim 16:

Claim 16 is rejected as the computer program product storing program instructions for performing the method of claim 8.

Regarding claim 18:

Meth teaches a processor in Fig. 1A.

Meth teaches a first memory medium storing a computer program in Fig. 1A.

Meth teaches wherein the processor is operable to execute the computer program in the entire document.

Meth teaches wherein the processor is operable to perform one or more snapshots of the execution of the computer program, wherein each snapshot is performed at a particular point during execution of the computer program in col. 1 lines 52-55.

Meth teaches wherein, for each snapshot, performing the snapshot comprises storing information usable to re-start execution of the computer program from the point at which the snapshot was performed in col. 1 lines 55-57.

Meth does not explicitly teach the process being a test executive sequence. Meth does, however, teach a program executing on a computer.

Hansen teaches the program being a test executive sequence in the entire document.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the test executive sequence of Hansen with the method of checkpointing a program of Meth.

One of ordinary skill in the art at the time of invention would have been motivated to combine the teachings because Meth teaches checkpointing a computer program. Meth teaches that checkpointing allows the computer program to be restarted from a checkpoint, rather than from the beginning, in the case of a failure during execution. Hansen teaches a specific type of computer program that could be utilized with the checkpoint method of Meth to provide a reliable, failure-tolerant test executive sequence.

Regarding claim 19:

Meth teaches a second memory medium providing a persistent storage means in Fig. 12.

Meth teaches wherein said storing information comprises persistently storing the information on the second memory medium col. 12 lines 26-27 and col. 13 lines 4-6.

Regarding claim 20:

Meth teaches executing a program on a computer system in the entire document.

Meth teaches performing one or more snapshots of the execution of the program, wherein each snapshot is performed at a particular point during execution of the program in col. 1 lines 52-55.

Meth teaches wherein, for each snapshot, performing the snapshot comprises storing information usable to re-start execution of the program from the point at which the snapshot was performed in col. 1 lines 55-57.

Meth does not explicitly teach the process being a test executive sequence hierarchy. Meth does, however, teach a program executing on a computer.

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Hansen teaches the program being a test executive sequence hierarchy in the entire document.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the test executive sequence hierarchy of Hansen with the method of checkpointing a program of Meth.

One of ordinary skill in the art at the time of invention would have been motivated to combine the teachings because Meth teaches checkpointing a computer program. Meth teaches that checkpointing allows the computer program to be restarted from a checkpoint, rather than from the beginning, in the case of a failure during execution. Hansen teaches a specific type of computer program that could be utilized with the checkpoint method of Meth to provide a reliable, failure-tolerant test executive sequence hierarchy.

Claims 10 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Meth and Hansen as applied to claims 1 and 11 above, and further in view of Shirakihara et al.

Regarding claims 10 and 17:

The teachings of Meth and Hansen are outlined above.

Meth and Hansen do not explicitly teach wherein the snapshots are performed periodically according to a particular time interval. Meth and Hansen do, however, teach checkpointing at particular intervals.

Shirakihara teaches wherein the snapshots are performed periodically according to a particular time interval in col. 1 lines 22-27.

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It would have been obvious to one of ordinary skill in the art at the time of invention to combine the particular interval teaching of Meth and Hansen with the time intervals of Shirakihara.

One of ordinary skill in the art at the time of invention would have been motivated to combine the teachings because Shirakihara discloses that this is a conventional method of performing checkpointing.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meth and Hansen as applied to claim 1 above, and further in view of Stiffler.

Regarding claim 9:

The teachings of Meth and Hansen are outlined above.

Meth and Hansen do not explicitly teach receiving user input specifying criteria for when to perform the snapshots. Meth and Hansen do, however, teach performing snapshots at particular intervals and the user specifying the sequence of various actions during the test execution.

Stiffler teaches receiving user input specifying criteria for when to perform the snapshots in col. 2 lines 44-47.

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the user input teachings of Stiffler with the checkpointing and user input teachings of Meth and Hansen.

One of ordinary skill in the art at the time of invention would have been motivated to combine the teachings because Stiffler teaches that the application programmer traditionally must determine when take a checkpoint, i.e. specifying criteria for when to

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perform a checkpoint. This satisfies an inherent requirement of Meth and Hansen, who require the user to specify the sequence of the test.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon contains elements of the instant claims and/or represents a current state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc M Duncan whose telephone number is 703-305-4622. The examiner can normally be reached on M-T and TH-F 6:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on 703-305-9713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

md



ROBERT BEAUSOLIEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100